

## SECTION 08110 - STEEL DOORS AND FRAMES

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section Includes:
  - 1. Steel doors, panels, and frames.
  - 2. Glazed light frames.
  - 3. OGP exterior door, furnished and installed by Owner.
  
- B. Related Requirements:
  - 1. Section 08710 - Door Hardware: Door hardware coordination.
  - 2. Section 08800 - Glazing: Glass in steel doors and frames.
  - 3. Section 09250 - Gypsum Board: Door frame attachment to metal wall framing.
  - 4. Section 09900 - Paints and Coatings: Field painting of doors and frames.
  - 5. Appendix A – Products and Work By Owner or Separate Contractor
    - a. General procedures related to Owner furnished products.
    - b. Manufacturers, suppliers, vendor contacts and product names and numbers related to Owner furnished products.

## 1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.
  
- B. American National Standards Institute (ANSI):
  - 1. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
  - 2. ANSI A250.8 (Formerly SDI-100) - Recommended Specifications for Standard Steel Doors and Frames.
  - 3. ANSI A250.11 (Formerly SDI-105) - Recommended Erection Instructions for Steel Frames.
  
- C. ASTM International (ASTM):
  - 1. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
  - 2. ASTM A653 - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  
- D. National Fire Protection Association (NFPA):
  - 1. NFPA 80 - Fire Doors and Windows.
  - 2. NFPA 252 - Fire Tests for Door Assemblies.
  
- E. Underwriters Laboratories (UL):
  - 1. UL 10B - Fire Tests of Door Assemblies.

## 1.3 QUALITY ASSURANCE

- A. Regulatory Requirements:
  - 1. Installed Fire Rated Door Assemblies: Conform to NFPA 80, NFPA 252, and UL 10B for fire rated class, as indicated on Drawings.
  - 2. When replacing existing fire-rated doors, verify and match rating required for opening assembly. Ensure compliance with the Building Code for fire-rated assembly for each specific opening. ]

## 1.4 DELIVERY, STORAGE AND PROTECTION

- A. Protect doors and frames with resilient packaging. Break seal on-site to permit ventilation.

- A. Receive Owner furnished products in accordance with the requirements of Section 01600.
- B. Product Delivery: Owner's Supplier will deliver Owner furnished products to site to be received by Contractor. Contact Owner's Supplier to coordinate product delivery, receipt and installation.
- C. Acceptance at Site: Inspect products upon delivery to Site to verify quantity, and report discrepancies in quantity delivered or damage.
- D. Product Packaging: Products will be delivered in manufacturer's original packaging with identification markings on each component or package.]

## 1.5 PROJECT CONDITIONS

- A. Field Measurements: Verify that field measurements are as indicated on shop drawings.
- B. Coordination: Coordinate the work with door opening construction, door frame and door hardware installation.

## PART 2 - PRODUCTS

### 2.1 OWNER FURNISHED PRODUCTS

- A. Owner's Supplier will furnish OGP exterior door as specified in Appendix A (Section 08110).

### 2.2 MANUFACTURERS

- A. Doors and Frames: Subject to compliance with requirements specified herein, provide flush doors and frames by one of the following:
  1. Amweld Building Products Division.
  2. Ceco Door Division.
  3. Curries.
  4. Mesker.
  5. Steelcraft Manufacturing Co.
  6. Republic Doors.

### 2.3 DOORS

- A. Interior Doors: ANSI 250.8, Level 1 and Physical Performance Level C (Standard-Duty), 1-3/4 inches thick, Model 1 (Full Flush) 0.032 min. thickness (20 gage), cold-rolled steel, optional core construction as specified below.
- B. Exterior Doors: ANSI 250.11, Level 2 and Physical Performance Level B (Heavy Duty), 1-3/4 inches thick, Model 1 (Full Flush) 0.042 inch min. thickness (18 gage), ASTM A 653, Commercial Steel (CS), Type B, with an A60 zinc-iron-alloy (galvannealed) coating cold-rolled steel, polyurethane or polystyrene foam insulated core construction
  1. Fabricate head flush with top edge to exclude water.
- C. Core Construction:
  1. Polyurethane core foamed in place or laminated, R=10; 1/2 inch maximum voids in any direction. Strength of bond between core and steel face sheet shall exceed strength of core so delamination will not occur during operating conditions.
  2. Rigid core of polystyrene foam board, R=7. Strength of bond between core and steel face sheet shall exceed strength of core so that delamination will not occur under operating conditions.
  3. Honeycomb Core: Kraft fiber honeycomb with nominal 1 inch cell size and crush strength of 45 psi.
  4. If laminated insulation is used, apply adhesive full coverage to door face.

## 2.4 FRAMES

- A. Interior Drywall Frames: 0.053 min. thickness (16 gage), cold-rolled steel, mitered welded units.
  - 1. Jamb depth: Sized to fit wall thickness.
- B. Interior Drywall Frames (Retrofit Openings ONLY): 16 gage, cold-rolled steel, mitered knock down.
  - 1. Jamb depth: Sized to fit wall thickness.
- C. Interior Masonry Frames: (16 gage), cold-rolled steel, mitered and welded units.
  - 1. Jamb depth: 5-3/4", unless otherwise indicated on Drawings.
- D. Exterior Frames: (16 gage steel), A60 galvanized coating (ASTM A 653), mitered and welded units.
  - 1. Jamb depth: 5-3/4", unless otherwise indicated on Drawings.

## 2.5 ACCESSORIES

- A. Rubber Silencers: Resilient rubber. Specified in Section 08710.
- B. Glazing Stops: Rolled steel channel shape, butted corners. Prepare for countersink style screws, located no more than 2 inches from each end, and spaced no more than 12 inches on center.
- C. Plaster Guards: Provide 26 gage steel plaster guards or mortar boxes, welded to frame, at back of hardware cut-outs in masonry openings.
- D. Mullions For Double Doors: Removable type, specified in Section 08710.
- E. Astragals for Double Doors: Steel, specifically for double doors. For rated pairs of doors, provide astragal to meet UL rating requirement. If doors are provided that maintain rating without an astragal, submit door manufacturer's literature indicating UL rating. If U-shaped astragal is used that does not require a coordinator, omit double door coordinator from applicable hardware set in Section 08710.
- F. Board Insulation Blocking: ASTM C578, Type IV (density 1.6 pcf minimum), 1 inch thick. Provide one of the following:
  - 1. Greenguard CM by Pactiv Building Products, Smyrna, GA (800) 241-4402.
  - 2. Styrofoam Square, by Dow Chemical Co., Midland, MI (800) 232-2436.
  - 3. Foamular 250, by Owens Corning, Toledo, OH (800) 438-7465.

- A. Glazed Lights in Fire-Rated Doors: Provide UL Labeled Rated Glass Assembly as specified in 08800.

## 2.6 PROTECTIVE COATINGS

- A. Bituminous Coating: Fibered asphalt emulsion, field applied.
- B. Primer: Exposed surfaces shall be cleaned, treated with Bonderite chemical and given one baked-on shop coat of gray synthetic primer.

## 2.7 FABRICATION

- A. Fabricate doors and frames in accordance with ANSI A250.8.
- B. Transom Bars: Fixed type, of same profiles as jamb and head.
- C. Fabricate doors with hardware reinforcement welded in place.
- D. Provide weep-hole openings in bottom of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.

- E. Fabricate frames with hardware reinforcement plates welded in place. Provide mortar guard boxes.
- F. For welded frames, weld face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
- G. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
- H. Fabricate frames to suit masonry wall coursing with 4 inch head member.
- I. Silencers: Prepare frames for silencers.
  - 1. Single Doors: Provide 3 single rubber silencers on strike side.
  - 2. Double Doors with Mullions: Provide 3 single rubber silencers on each door, on strike side.
  - 3. Double Doors Without Mullions: Provide 2 single silencers on frame head.
  - 4. Do not install silencers until frames have received their final finish coat.
- J. Fire Rated Doors:
  - 1. Attach fire rated label to each door and each frame unit. Do not paint over labels.
  - 2. Cut-outs may be made to existing rated doors for the installation of rated glazing, provided work is done in an approved shop. Site modifications of rated doors will not be allowed.
- K. Undercut non-fire rated doors as indicated on drawings.
- L. Where multiple openings are indicated, fabricate double wide frames of material gauge as scheduled. Joint frames at swing jamb using minimum 16 gauge insert spline connection full length. After assembly, fill joint with epoxy filler, allow to harden, and finish smooth and flush.
  - 1. Fabricate impost base anchor, providing for minimum of two (2) anchors per impost. Base shall fit impost inside profile with "force fit."

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify substrate conditions, opening sizes and tolerances are acceptable for proper installation.

### 3.2 INSTALLATION

- A. Install frames in accordance with ANSI A250.11.
- B. Install doors in accordance with ANSI A250.8.
- C. Coordinate with adjacent wall construction for anchor placement.
- D. Coordinate installation of glass and glazing.
- E. Coordinate installation of doors with installation of hardware specified in Section 08710.
- F. Provide board insulation blocking at exterior hollow metal frames. Glue blocking in frame jambs (strike side and hinge side) at height indicated on Drawings.
- G. Factory install glazed light assemblies in accordance with manufacturer's published instructions for fire-rating required and compliance with referenced standards.

### 3.3 INSTALLATION BY OWNER'S SUPPLIER

- A. OGP exterior door, hardware and glazing will be installed by Owner's Supplier as specified in Appendix A (Section 08110).

3.4 ADJUSTING AND CLEANING

- A. Test for smooth operation through full range of swing; make necessary adjustments.
- B. Coordinate adjustment of doors with installation of hardware. Adjust doors and hardware for smooth and balanced door movement. Comply with ANSI A117.1.

END OF SECTION